



Cooper Power Systems' CBC-7002 stand-alone Capacitor Bank Controller is economical, feature-rich and expandable. The CBC-7002 operates as a stand-alone control device—yet it can easily be upgraded in the future to become part of a coordinated control strategy.

CBC-7002 Series Stand-Alone Capacitor Bank Controllers

Overview

The CBC-7002 is the industry's premier stand-alone Capacitor Bank Controller (CBC) with operational control strategies based on time, temperature, and voltage set points. These set points can be combined to maximize capacitor utilization and operation.

The CBC-7002 incorporates numerous features that all electric utilities desire such as emergency voltage protection set points, adaptive voltage, neutral current sensing and data logging. This truly universal design offers maximum flexibility at an economical price.

Uncompromising Flexibility

Purchase the CBC-7002 stand-alone controller today—confident that it can be cost-effectively upgraded with a wide range of communications options tomorrow. The interchangeable SelectComm communications modules provide a utility the ultimate in communications flexibility.

Data Logging

The CBC-7002 maintains data logs for the following types of information: voltages, trip and close operations, temperature, neutral current and alarm events.

All this information can be transmitted back to the Yukon Energy Services Master Station using two-way communications.

Features

Operation

- Multiple operation strategies including combinations of time/temperature and voltage override strategies

- Multiple season and weekend schedules
- Perpetual calendar for holiday operations
- Time zone and daylight saving time

Voltage

- Over voltage and under voltage points for trip-and-close operations
- Emergency over and under voltage point for trip-and-close
- Adaptive voltage can be enabled to inhibit a trip-or-close operation based on the action causing a voltage violation

Data Logging

- Data logging of line voltage, high, low and adaptive voltages for accurate on-site voltage analysis

Standard Features

- LEDs for capacitor bank status
- Programmable front panel or service tool available
- Trip, close and reclose delay timers for personnel safety
- Operations counter with lockout violation features
- Three analog inputs
- Inputs for neutral current sensor
- Temperature sensor
- Grounding lug

Optional Features

- Optional four-jaws, six-jaws or surface mount configurations
- Optional neutral current sensor
- Optional Bluetooth service port

Local control of Capacitor Banks

A variety of local conditions are monitored and can be used to activate local control actions:

- Local control based on temperature
- Local control based on neutral current
- Local control based on line voltage
- Local control based on a time-of-day schedule
- Any combination of the above local control actions
- Local manual control for maintenance

120 VAC Line Voltage Monitoring

This monitors the 120 VAC source voltage used to power the CBC. Alarm set points for low and high voltage levels are locally or remotely configurable.

Neutral Current Sensor

- Indicates normal operation, open circuits and failed operations
- Configurable for a variety of cap bank sizes
- Violation data logs

The neutral current sensor is installed on the neutral lead. The neutral current can be used to log violations as well as locking out an unbalanced capacitor bank.

Adaptive Voltage Algorithm

Prevents the execution of a control command if the operation will cause an over-voltage or under-voltage condition.

Operational Delay Timers

The unit can be configured with delay times for trip, close and reclose operations. The delay times give field personnel time to move away from the bank after initiating control and before the switch operates. The operational delay times can be set locally.

Status/Data LED Indicators

The CBC features LEDs for bank status and CBC internal data:

- Local Local control mode
- Tripped Switch tripped
- OV/UV Over voltage/under voltage condition
- Closed Switch closed
- Power AC power present
- RSSI Receive Signal Strength Indicator
- Receive Receiving data
- Transmit Transmitting data

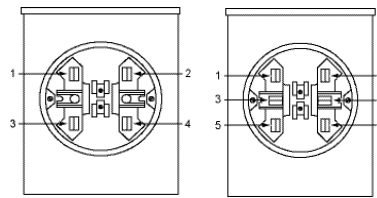
Enclosure Housing

The enclosure is available in surface mount, four-jaw or six-jaw socket configurations, offering the following features:

- NEMA 4 rain-tight rating
- Utility seal and padlocking provisions
- Gray fiberglass construction

Four-Jaw and Six-Jaw Socket Styles

The following graphics and table illustrate the supported four-jaw and six-jaw socket styles:



(view looking into the socket)

Jaw	Style 1	Style 2	Style 3	Style 4	Style 5
1	L	L	CSL	L	L
2	N/COM	N/COM	N	N	N
3	TR	CL	L	CSL	NSL
4	CL	TR	TR	CSH	NSH
5	-	-	CSH	TR	TR
6	-	-	CL	CL	CL

N=Neutral, L=Line, CL=Close, TR=Trip, CSH=Line Current Signal High, CSL=Line Current Signal Low, NSH=Neutral Current Signal High, NSL=Neutral Current Signal Low

COMMUNICATION UPGRADES

One-Way SelectComm Modules
 · 900 MHz FLEX Paging - One-way communication using public paging networks directly to the CBC.

Two-Way SelectComm Modules
 · Cellular GSM/GPRS
 · Cellular CDMA/1xRTT
 · Serial DNP 3.0
 · Ethernet TCP/IP
 · Landis+Gyr Gridstream RF

(All two-way SelectComm modules support DNP 3.0)

SPECIFICATIONS

Temperature:
 -40°F to 185°F (-40°C to 85°C)
 Cellular Modules Temperature:
 -22°F to 140°F (-30°C to 60°C)
 Relative Humidity: 5 to 95% non-condensing

Power Requirements
 Voltage: 100 to 135 VAC; 60 Hz
 Optional Battery: 12 VDC rechargeable

Power Test
 EFT per IEC61000-4-4 at 4kV
 100 kHz Ring per IEEEC62.41 at 6 kV (.5 kA)
 1.2/50 (8/20) Combination Waveform per IEEEC62.41 at 6 kV (3 kA)

I/O Test
 EFT per IEC61000-4-4 at 4kV
 1.2/50 (8/20) Combination Waveform per IEC61000-4-5 at 4 kV (100 A)

Electrostatic Discharge
 ESD per IEC61000-4-2 discharge through contact at 8 kV.
 ESD per IEC61000-4-2 discharge through air at 15 kV.

Outputs
 Two 120 VAC 30 Ampere relays for trip-and-close. Type 1 Form C contacts interlocked and wired as two Form A outputs. Twelve VDC coils. Activation times typically set for 30 seconds.

Inputs
 Three analog inputs for control or monitoring. Four optional digital inputs for control or monitoring.

Test Points
 Four test points for trip, close, line and neutral values.